# ADDITIONAL EVIDENCE ON FOSSIL SALISBURIÆ FROM AUSTRALIA.

By F. Ratte, M.E.

*Jeanpaulia* (*?*) *palmata*, Ratte, Proc. Linn. Soc. N.S.W., Vol. I. (ser. 2), p. 1078; *Salisburia palmata*, Ratte, *emend.* from *Jeanpaulia* or *Baiera palmata*, Ibid. Vol. II. (ser. 2), p. 137.

After the last meeting of the Society, when I suggested that the large palmate leaf found in the shale of the Wianamatta-Hawkesbury formation, should be referred to the genus *Salisburia*, I unexpectedly found in the French weekly paper "La Nature," an interesting contribution on the subject, by Marquis G. de Saporta.

From that paper and the woodcuts given, I find that this author, and also Professor Heer of Zurich, give the name of *Salisburia* to a number of plants with coriaceous and persistent leaves, which, for the sake of giving a brief outline of their characters and distribution, I will enumerate as follows :—

| | Locality. | Jurassic. | Cretaceous. |
|---|---|---|---|
| *a. Leaf entire, rhomboidal (transversally).* | | | |
| Salisburia antarctica. Sap..... | Australia... | Lower Lias? | ..... |
| *b. Leaf entire, reniform.* | | | |
| Salisburia primordialis. Hr..... | S. Greenland | ..... | Chalk |
| *c. Leaf fan-shaped, with only a few incisions.* | | | |
| Salisburia integriuscula. Hr.... | Cape Boheman (Spitzberg) | Jurassic | ..... |

| | Locality. | Jurassic. | Cretaceous. |
|---|---|---|---|
| *d. Leaf confusedly quadrangular, irregularly, not deeply sinuated, divisions broad, irregularly rounded at the apex.* | | | |
| Salisburia digitata (Brngt.) Hr. | Scarborough, and Cape Boheman | Middle Oolite | ..... |
| *e. Leaf distinctly divided into two principal symmetrical segments, more or less sinuated.* | | | |
| Salisburia Huttoni (Sternbg.) Hr. | Scarborough | Middle Oolite | ..... |
| S. pseudo-Huttoni (Hr.) Sap..... | Kajamündung (East Siberia) | Oolite | ..... |
| *f. Leaf palmate; divisions numerous, deep, oval, rather broad; secondary sinuations not very deep. Apices rounded or rather acute (S. Schmidtiana).* | | | |
| Salisburia pluripartita. Schimp. | Westphalia | ..... | Wealden |
| S. arctica. Hr. ..... | S. Greenland | ..... | Urgonian |
| S. Schmidtiana. Hr... ..... | East Siberia | Oolite | ..... |
| *g. Leaf palmate; divisions numerous, deep, oval, elongate; secondary divisions deep. Apices rather more acute than rounded.* | | | |
| Salisburia flabellata. Hr..... | East Siberia | Oolite | ..... |
| S. lepida. Hr..... | East Siberia | Oolite | ..... |
| *h. Leaf palmate; divisions numerous, digitiform, broad, rounded at the apex.* | | | |
| Salisburia sibirica. Hr..... | East Siberia | Oolite | ..... |
| S. sibirica var. pusilla (Hr.) Sap. | East Siberia | Oolite | ..... |
| *k. Leaf palmate; divisions numerous, digitiform, narrow. Apex rounded* | | | |
| Salisburia concinna. Hr..... | East Siberia | Oolite | ..... |

The last two forms are most nearly related to our fossil. But even now, after this fresh evidence, the generic affinity does not seem perfectly clear. There are, besides *Baiera*, other genera

(*Phœnicopsis*, *Trichopitys*, and *Czekanowskia*), allied to *Salisburia*, about which I have no literature at hand; and Marquis de Saporta, in the above-mentioned contribution, (1) even doubts whether *Salisburia concinna* of Professor Heer, is really a *Ginkgo*, as its resemblance with the genus *Baiera*, might, according to this author, be due to a recurrence of form appearing in distinct and parallel groups, originally issued from a common ancestral stock.

I will not follow the author in his sketch of the affinities and migrations of the different species; I will simply quote, without translating, any paragraph dealing with the Australian fossil, *Salisburia antarctica*, or tracing the genus further back than our triassic species.

At the same time, as a matter of reference, it will not probably be out of place to mention that Mr. Feistmantel has described three species from the Gondwana series (Foss. Flora Gondwana, Vol. IV. p. 49, pl. III. &c.)

Now, from Marquis de Saporta, I give the following extracts:

"Un fait singulier est venu dévoiler récemment l'existence à l'autre extrémité du globe, sur le sol australien, d'un quatrième point alors habité par le même genre *Salisburia*. Le moment précis de cette colonisation, indice d'une très-vaste diffusion antérieure due à la grande longevité du type, ce moment doit être rapporté au lias ou même au lias inférieur. On voit par la qu'à l'exemple des *Araucaria* dans le passé et conformément à ce que le hêtre (*fagus*) nous laisse voir maintenant, les *Salisburia* étaient répandus à la fois dans les deux hemisphères, vers le milieu des temps secondaires, et qu'ils s'étendaient au-delà du tropique du Capricorne, aussi bien qu'à l'intérieur du cercle polaire arctique." (Loc. cit. p. 157.)

And further:—

"L'Australie a fourni une seule espèce, que nous nommerons *Salisburia antarctica*." (Loc. cit. p. 203.)

This Australian species thus, it appears, comes back to us indirectly, and is still unpublished at the time de Saporta writes;

(1) G. de Saporta. Les Variations morphologiques d'un type de Plantes. "La Nature" 26 Août 1882, p. 203.

he only figures it (loc. cit. p. 204); and I think it belongs to the Proceedings to have it represented; I therefore give a drawing of it (Plate III). The author does not state where his specimen comes from, and more light on the subject will be highly interesting.

However our *Salisburia palmata*, if it ought to be considered as such, is not the oldest of its genus, as de Saporta has named *Salisburia primigenia*, a plant discovered by Professor Grand' Eury in the Middle Permian of Jelovick, near Tchoussovskaiä, in the Urals; about which discovery he says :—

"Jusqu'ici les Gingkos ne dépassaient pas le rhétique, dans la direction du passé (in the past). En Europe le *Salisburia crenata* (Brauns) Nath., et, en Australie, le *Salisburia antarctica*, Sap., espèce encore inédite, marquaient les derniers jalons (land marks) qui aient été signalés." [Sur quelques types de végétaux récemment observés a l'état fossile. M. G. de Saporta, in Comptes Rendus Acad. Sciences, 1r. Semestre, 1882, page 922.]

Before ending this note I beg leave to point out the importance, for our geological record, of ascertaining the precise locality whence *Salisburia antarctica*, Sap. comes. Some clue to it might be found in Rev. T. Woods's elaborate paper on "The Coal Plants of Australia," as he places the Burnett River beds, where already *Jeanpaulia (Baiera) bidens*, T. Woods, has been found, as Infralias or Lower Lias (?) with a query.